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Predictors of work participation of young adults with mild intellectual disabilities

Anja Holwerda [a,b,*], Jac J.L. van der Klink [a,b], Michiel R. de Boer [a,b,c], Johan W. Groothoff [a,b], Sandra Brouwer [a,b]

[a] Department of Health Sciences, Community & Occupational Medicine, University Medical Center Groningen, University of Groningen, The Netherlands
[b] Graduate School for Health Research, University Medical Center Groningen, University of Groningen, The Netherlands
[c] Department of Health Sciences, VU University, Amsterdam, The Netherlands

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ABSTRACT

Individuals with intellectual disabilities (ID) are three to four times less often employed compared to their non-disabled peers. Evidence for factors associated with work participation of young adults with ID is limited. Furthermore, studies on predictors for sustainable work participation among young adults with ID is lacking altogether. Therefore, the aim of this study was to investigate which factors predict finding as well as maintaining employment of young adults with mild ID. We obtained data on 735 young adults with mild ID, aged 15–27 years, applying for a disability benefit. The follow-up period ranged from 1.25 to 2.75 years. Motivation, expectations regarding future work level and living situation predicted finding work as well as maintaining employment for at least 6 months. In this study, especially personal factors were influential in predicting work outcome and may be suitable factors to include in interventions.

1. Introduction

The participation rates of young adults with intellectual disabilities (ID) range from 10% to 40%, which is considerably lower than the participation rates of their peers without disability (Ireys, Salkever, Kolodner, & Bijur, 1996; Lysaght, Ouellette-Kuntz, & Lin, 2012; Rose, Saunders, Hensel, & Kroese, 2005; WHO & World Bank, 2011). Moreover, it has been shown that individuals with ID were 3–4 times less often employed compared to their non-disabled peers, that they were less likely to be competitively employed and more likely to work in sheltered work or segregated settings than those with other disabilities (Verdonschot, de Witte, Reichrath, Buntinx, & Curfs, 2009a). It also has been found that individuals with ID tend to work in entry level positions, earn lower wages and work fewer hours than their non-disabled peers (Jahoda, Kemp, Riddell, & Banks, 2008; Kirsh et al., 2009; Lysaght, Ouellette-Kuntz, et al., 2012).

Although research suggests that individuals with ID can be a potentially valuable resource for the workforce as they are typically stable, loyal and competent employees, in daily living it is apparently a struggle for them to find and to maintain a job (Kirsh et al., 2009; Lysaght, Ouellette-Kuntz, et al., 2012). In the Netherlands young adults with ID are mostly educated in special needs education classes. These special needs schools provide vocational training and internships for young adults with ID in the final years at school and appropriate job placements in the transition from school to work.

* Corresponding author at: University Medical Center Groningen, University of Groningen, Department of Health Sciences, Community & Occupational Medicine, Antonius Deusinglaan 1, Building 3217, Room 621, 9713 AV Groningen, The Netherlands. Tel.: +31 50 363 8274; fax: +31 50 363 6251.
E-mail addresses: a.holwerda01@umcg.nl, anyamanii@gmail.com (A. Holwerda).

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Individuals with ID often need continuous assistance and support in the transition from school to work as well as on the job (Lindsay, 2011; Verdonschot et al., 2009a; Verdonschot, de Witte, Reichrath, Buntinx, & Curfs, 2009b) to be able to develop and maintain their work skills. The lack of work and of necessary support services can make these people overly dependent on family members or social protection (Davies & Beamish, 2009; Dixon & Reddacliff, 2001; Donelly et al., 2010).

Many individuals with ID desire to participate in work (Donelly et al., 2010; Eggleton, Robertson, Ryan, & Kober, 1999), which provides them with opportunities for financial independence and independent living, as well as a structured life and meaningful social participation (Dixon & Reddacliff, 2001; Eggleton et al., 1999; Grant, 2008; Jahoda et al., 2008; Lysaght, Cobigo, & Hamilton, 2012; Lysaght, Ouellette-Kuntz, et al., 2012). Work allows them to have contact with other people besides family and friends (Dixon & Reddacliff, 2001; Donelly et al., 2010; Eggleton et al., 1999; Grant, 2008; Jahoda et al., 2008; Lysaght, Cobigo, et al., 2012; Lysaght, Ouellette-Kuntz, et al., 2012) and work may help to build their self-confidence and develop their skills (Eggleton et al., 1999; Grant, 2008). A review on the socio-emotional impact of supported employment on individuals with ID, found competitive employment was positively related to quality of life, well-being and autonomy (Jahoda et al., 2008). This was confirmed by other studies (Claes, Van Hove, Vandevelde, van Loon, & Schalock, 2012; Eggleton et al., 1999; Kober & Eggleton, 2005). However, competitive employment was not related to an increasing sense of social belonging and community integration of individuals with ID (Eggleton et al., 1999; Jahoda et al., 2008). In contrast, Kober and Eggleton (2005) found that competitively employed individuals with ID scored higher on social belonging and community integration than their counterparts in sheltered employment.

To be able to increase the employment rate of young adults with ID and the effectiveness of support programmes it is important to know which factors facilitate or hinder work participation. Knowledge of prognostic factors for sustainable work participation could provide important input for interventions in the transition from school to work and for support services while working.

Personal and social factors (e.g. motivation, self-esteem, family involvement and social support) have been stated in both reviews as well as qualitative studies as being essential in securing employment for individuals with ID (Eisenman, 2003; Foley, Dyke, Girdler, Bourke, & Leonard, 2012; Timmons, Hall, Bose, Wolfe, & Winsor, 2011). Motivation has been well established in the literature (Foley et al., 2012; Timmons et al., 2011) and has been often mentioned by practitioners to influence employment outcomes. Low self-esteem in individuals with disabilities has been found to decrease the chance of employment (Eisenman, 2003). Research also highlights the role of family members in the transition from school to work, offering career-related advice, helping to find jobs, shaping aspirations and offering practical and moral support to maintain employment (Eisenman, 2003; Timmons et al., 2011). However, only three studies had employment status as their primary outcome (Dunham, Schrader, & Dunham, 2000; Martorell, Gutierrez-Recacha, Pereda, & Ayuso-Mateos, 2008; Rose et al., 2005). Furthermore, work status in these studies was assessed by asking if the subjects had found a job or were currently working. No studies on sustainability of employment, i.e. finding *and* maintaining a job for a specified period of time, in this population were found. As a result, insight in predictors for sustainable employment among young adults with ID is limited. Sustainability of employment is important in this group as young adults with ID are vulnerable to changes and have better chances to develop their working skills in a stable work environment. As factors influencing finding work by individuals with ID may differ from factors influencing maintaining employment, it is important to take sustainability of employment into account as well. Besides the lack of appropriate work outcome measures, previous studies have been cross-sectional or retrospective in design (Davies & Beamish, 2009; Donelly et al., 2010; Dunham et al., 2000; Martorell et al., 2008; Rose et al., 2005). Other studies have been explorative and qualitative (Dixon & Reddacliff, 2001; Donelly et al., 2010; Timmons et al., 2011). No prospective longitudinal studies are known to us, meaning prognostic factors for work participation in this group are unknown.

Therefore, the aim of this study was to investigate which factors predict sustainable work participation, finding as well as maintaining employment, of young adults with mild ID.

2. Methods

2.1. Sampling and procedure

This study is part of a cohort study 'Young Disabled at Work' examining factors that predict work participation among young adults, aged 15–27 years, who applied for a disability benefit at the Dutch Social Security Institute (SSI). The SSI is responsible for all work-ability assessments under social security regulations and provides a disability benefit to young adults with any disability who are not able to earn minimum wage level independently. For a detailed description of the work ability assessment in the Netherlands, see Holwerda, Groothoff, de Boer, van der Klink, and Brouwer (2012). Participants eligible for the present study were recruited using registry data from the local SSI offices in the three northern regions in the Netherlands (Groningen, Friesland, Drenthe). For this study only participants with mild intellectual disabilities were included. Individuals with moderate or severe ID were excluded, because they were often deemed to have no ability to work according to the insurance physician (IP). Diagnosis was based on the IP's indication of the primary or secondary diagnosis code (CAS-codes) responsible for the claimant's disability. This classification system (CAS) has been derived from the ICD-10 and developed for use in occupational health and social security in the Netherlands (Ouwehand & Wouters, 1997). In this study applicants with diagnoses coded as chromosomal abnormalities,

other congenital anomalies or other developmental disorders resulting in a mild or borderline intellectual disability, were eligible for the study. The ID-level was determined by the insurance physician, based on IQ, personal and social functioning and level of support needed.

Recruitment started at January 1st 2009 and ended at 31st December 2009. The follow-up period started at December 31st, 2008 and ended at September 30th, 2011. Because the inclusion lasted one year, the follow-up differed for the individuals in the study and started in the quarter following the disability assessment at the SSI. The follow-up period per individual ranged from one year and three months to two years and nine months. During the claim assessment insurance physicians of the SSI were asked to fill out a registration form, on which the diagnosis and possible co-morbid conditions were filled out. Preceding the disability assessment the participants were approached to fill in a questionnaire on personal and social factors. Written consent was provided by all subjects and the Medical Ethics committee of the University Medical Center Groningen, the Netherlands, approved recruitment, consent and field procedures prior to the study.

2.2. Measures

2.2.1. Finding and maintaining employment (outcome variables)

The outcome measures, finding work and sustainable employment, were derived from the POLIS register data. The POLIS registry is a database, in which all Dutch workers are included that have earned any wage (from regular, supported or sheltered jobs) in the period concerned. Only paid work – for any number of hours – was included. In the period from December 2008 until September 2011 wage earning in the preceding month was assessed every quarter (twelve measurements). Using these data, we constructed the two work outcome measures. Finding work was defined as work at any point during the follow-up. Maintaining work was defined as work for at least six consecutive months during the follow-up. Only wage earning following disability assessment was taken into account.

2.2.2. Personal and social factors (independent factors)

Age and gender were derived from SSI registers.

Occurrence of co-morbid condition was based on the IP's indication of a primary and/or secondary diagnosis code (CAS code), in addition to the mild intellectual disability.

Education was self-reported by the respondent on the question "Which education did you follow after primary school?" with the following response options: Special secondary education/Practical education/Secondary education/Vocational training/High school/Higher education/Other.

Self-esteem was measured with six items, e.g. "I often feel insecure" and "I regularly worry about things", with response options true/not true (GGD Flevoland, 2003). A sum score was calculated ranging from 0 (low self-esteem) to 6 (high self-esteem). This sum score was dichotomized in low self-esteem (scores 0–3) and high self-esteem (scores 4–6).

Self-knowledge was with six items, e.g. "I know which work I can perform well" and "I know my strengths and weaknesses", with response options agree/neutral/do not agree (De Vos, 2008). A sum score was calculated ranging from 0 (poor self-knowledge) to 6 (excellent self-knowledge). This sum score was dichotomized in poor self-knowledge (scores 0–3) and good self-knowledge (scores 4–6).

Motivation was measured with ten self-constructed items, e.g. "I like to earn (my own) money" and "I like to develop my skills", with response options true/not true. A sum score was calculated ranging from 0 (not motivated) to 10 (highly motivated). This sum score was dichotomized in low motivation (scores 0–7) and high motivation (scores 8–10).

Expectation of young adult with ID regarding future work level was measured with one self-constructed question "Do you think you are able to work in regular employment?" with response options yes, completely/yes, partly/no.

Living situation was based on the respondent's response on two questions (1) "What is your living situation?" with response options Parental home/Own place/Student home/Sheltered home/Institution or Hospital/Other and (2) "Who is living there with you?". These questions were adapted from the 'Tracking Adolescents' Individual Lives' Survey' (TRAILS) questionnaire T4Youth based on the National Monitor Youth Health in the Netherlands (RIVM, 2005). Subsequently four mutually exclusive groups were constructed: (1) living independently with or without partner, (2) living with parents/family/foster family, (3) living in a supported/sheltered home, and (4) other living situations.

Perceived support from parents was measured by five self-constructed items, e.g. "My parents help me with problems" and "My parents support me when I am down", with response options true/not true. A sum score was calculated ranging from 0 (no perceived support) to 5 (high perceived support). This sum score was dichotomized in low perceived support (scores 0–3) and high perceived support (scores 4–5).

Perceived support in general was measured by six items, e.g. 'I have people to talk to' and "I feel isolated from others", with response options true/not true. These items were adapted from the POLS Youth questionnaire (Permanent Study of Living Situation) (Statistics Netherlands, 2005). A sum score was calculated ranging from 0 (no perceived support) to 6 (high perceived support). This sum score was dichotomized in low perceived support (scores 0–4) and high perceived support (scores 5–6).

Attitude of parents regarding work for young adult with ID was measured by one question "How important is it for your parents that you will find or retain work?" with response options very important/important/not important/I don't know/other (De Vos, 2008). These responses were recoded into a dichotomized score with two categories 'parent considers work important' and 'parent considers work not important or attitude is unknown'.

Attitude of social environment regarding work for young adult with ID was measured by one question "How important is it for your environment that you will find or retain work?" with response options very important/important/not important/I don't know/other (De Vos, 2008). These responses were recoded into a dichotomized score with two categories 'environment considers work important' and 'environment considers work not important or attitude is unknown'.

2.3. Statistical analyses

Cox regression (survival) analyses were conducted in order to examine which factors predicted work-outcome. Separate analyses were conducted for finding employment and for maintaining employment. In the Cox regression, we entered the four potential personal predictors (self-esteem, self-knowledge, motivation and expectation regarding future work level) and the five potential social predictors (living situation, perceived support from parents, perceived support in general, attitude of parent and attitude of social environment regarding work for young adult with ID) to the model simultaneously and performed a backward regression analysis. Because we had a considerable number of missing values for the covariates, we decided to impute missing data for these variables. Data were imputed using chained imputations (Van Buuren, 2007) with an imputation model consisting of all the potential predictors and co-morbidity regressed on the following variables for which we had complete data: age, gender, the variables indicating finding work and maintaining employment and the Nelson-Aalen estimator for the cumulative baseline hazard of the outcome (White & Royston, 2009). The multiple imputations were done separately for finding work and sustainable employment using the same imputation model except for the Nelson Aalen estimators for the two separate outcomes (finding work and sustainable employment). Traceplots of means and SDs of imputed variables were checked for convergence. After we had observed convergence from the traceplots, we applied Rubin's rules to derive regression coefficients for our potential predictors. In this process, we also examined whether the number of imputations influenced the results and found that results were stable after 50 imputations, which is what we used in the final analyses. Finally, complete case analyses were compared with the results from the imputed datasets to examine whether unexpected or extreme differences occurred. An alpha of 0.05 was used for all statistical tests. The survival analyses were conducted in STATA version 12.1.

3. Results

3.1. Description of the sample

Administrative data about gender and age was available for all disability claimants with mild ID ($n = 936$). We excluded 40 individuals from the analyses, because the severity of their mental retardation was unknown. Another 99 individuals were excluded from the analysis, because they already worked at baseline and thus were not at risk to find work. Of the applicants included in the study ($n = 797$), 92.2% filled out a questionnaire ($n = 735$). These respondents did not differ from non-respondents with regard to age, but did differ regarding gender; more non-respondents were males.

The cases included in the analysis consisted of 427 men (58.1%) and 308 women (41.9%), with a mean age of 18.5 years (SD 1.9). Of the subjects, 67.5% ($n = 496$) had not found work during the follow-up, 32.6% found work ($n = 239$), of whom 17.6% dropped out ($n = 129$) and 15.0% ($n = 110$) worked for at least six months. Most of the subjects had a low educational background (68.1%) and the majority lived with parents or family (76.8%). Of the subjects, 36.9% had one and 19.5% had two or more comorbid conditions. Developmental disorders were the most common comorbid condition (37.7%). Of the subjects, 58.2% had a high self-esteem and 92.6% were highly motivated. Almost one in three subjects experienced low perceived support from parents (30.1%) (Table 1).

3.2. Predictors of work participation in young adults with mild ID

The results of the survival analyses are presented in Table 2.

The final model regarding finding work consisted of the following predictors: living situation, motivation, and expectation regarding future work level. Individuals living with parents or family or living independently were three times more likely to find work than individuals living in residential placement or sheltered accommodation (HR = 2.95, 95%CI 1.20–7.21 and HR = 2.96, 95%CI 1.50–5.81 respectively). Highly motivated individuals were three times more likely to find work than less motivated individuals (HR = 3.47, 95%CI 1.31–9.21). Individuals who expected to be able to work fulltime or part-time were more likely to find work than individuals who expected not to be able to work (HR = 4.09, 95%CI 2.57–6.53 and HR = 2.33, 95%CI 1.46–3.72 respectively).

With regard to maintaining employment, similar results were found, i.e. living with parents or independently (HR = 13.59, 95%CI 1.82–101.29 and HR = 15.31, 95%CI 1.79–130.93 respectively) and expectation to be able to work fulltime or part-time (HR = 3.03, 95%CI 1.61–5.72 and HR = 1.82, 95%CI 1.01–3.29 respectively). In addition, men were more likely to find and maintain work than women (HR = 1.72, 95%CI 1.13–2.64). However, motivation was not statistically significantly related to maintaining employment.

Cox regression analyses on complete cases using all potential predictors (Method Enter) yielded coefficients of the same relative magnitude and direction as compared to the MI Cox regression analyses with all potential predictors. The only exception was that gender was not related to maintaining employment in the complete case analysis (HR 0.97, 95%CI

Table 1
Personal characteristics of respondents with mild intellectual disabilities.

	Total *N* (%)	No work *N* (%)	Finding work[a] *N* (%)	Sustainable employment *N* (%)
Work outcome	735 (100.0%)	496 (67.5%)	129 (17.6%)	110 (15.0%)
Gender (data SSI)				
Male	427 (58.1%)	276 (55.6%)	73 (56.6%)	78 (70.9%)
Female	308 (41.9%)	220 (44.4%)	56 (43.4%)	32 (29.1%)
Age (data SSI)				
15–20 years	657 (89.4%)	436 (87.9%)	120 (93.0%)	101 (91.8%)
21–27 years	78 (10.6%)	60 (12.1%)	9 (7.0%)	9 (8.2%)
Comorbidity ($n = 735$)				
Psychiatric and developmental disorders	324 (44.1%)	235 (47.4%)	57 (44.2%)	32 (29.1%)
Somatic diseases	90 (12.2%)	60 (12.1%)	15 (11.6%)	15 (13.6%)
No comorbidity	321 (43.7%)	201 (40.5%)	57 (44.2%)	63 (57.3%)
Number of comorbid conditions ($n = 735$)				
Two or more comorbid conditions	143 (19.5%)	107 (21.6%)	22 (17.1%)	14 (12.7%)
One comorbid condition	271 (36.9%)	188 (37.9%)	50 (38.8%)	33 (30.0%)
No comorbidity	321 (43.7%)	201 (40.5%)	57 (44.2%)	63 (57.3%)
Highest education[b] ($n = 530$)				
Special secondary education	132 (24.9%)	106 (30.6%)	22 (22.4%)	4 (4.7%)
Practical education	229 (43.2%)	130 (37.6%)	42 (42.9%)	57 (66.3%)
Secondary education	62 (11.7%)	44 (12.7%)	8 (8.2%)	10 (11.6%)
Vocational training	90 (17.0%)	51 (14.7%)	25 (25.5%)	14 (16.3%)
High school	4 (0.8%)	4 (1.2%)	0 (0.0%)	0 (0.0%)
Higher education (college/university)	5 (0.9%)	4 (1.2%)	0 (0.0%)	1 (1.2%)
Other	8 (1.5%)	7 (2.0%)	1 (1.0%)	0 (0.0%)
Living situation[b] ($n = 508$)				
Living independently (with or without partner)	36 (7.1%)	25 (7.5%)	5 (5.6%)	6 (7.1%)
Living with parents/family/foster family	390 (76.8%)	242 (72.5%)	74 (82.2%)	74 (88.1%)
Residential placement/sheltered accommodation	66 (13.0%)	57 (17.1%)	8 (8.9%)	1 (1.2%)
Other living situation	16 (3.1%)	10 (3.0%)	3 (3.3%)	3 (3.6%)
Expectation future work level[b] ($n = 735$)				
Completely able to work in competitive employment	106 (14.4%)	47 (9.5%)	32 (24.8%)	27 (24.5%)
Partly able to work in competitive employment	196 (26.7%)	125 (25.2%)	40 (31.0%)	31 (28.2%)
Not able to work in competitive employment	156 (21.2%)	132 (26.6%)	8 (6.2%)	16 (14.6%)
Unknown	277 (37.7%)	192 (38.7%)	49 (38.0%)	36 (32.7%)
Self-esteem[b] ($n = 471$)				
Low self-esteem	197 (41.8%)	148 (48.1%)	25 (29.1%)	24 (31.2%)
High self-esteem	274 (58.2%)	160 (51.9%)	61 (70.9%)	53 (68.8%)
Self-knowledge[b] ($n = 490$)				
Poor self-knowledge	255 (52.0%)	175 (55.4%)	43 (47.3%)	37 (44.6%)
Good self-knowledge	235 (48.0%)	141 (44.6%)	48 (52.7%)	46 (55.4%)
Motivation[b] ($n = 484$)				
Low motivation	36 (7.4%)	33 (10.5%)	2 (2.2%)	1 (1.2%)
High motivation	448 (92.6%)	282 (89.5%)	87 (97.8%)	79 (98.8%)
Perceived support from parents[b] ($n = 564$)				
Low perceived support	170 (30.1%)	119 (31.4%)	26 (25.0%)	25 (30.9%)
High perceived support	394 (69.9%)	260 (68.6%)	78 (75.0%)	56 (69.1%)
Perceived support in general[b] ($n = 541$)				
Low perceived support	91 (16.8%)	67 (18.2%)	14 (14.4%)	10 (13.2%)
High perceived support	450 (83.2%)	301 (81.8%)	83 (85.6%)	66 (86.8%)
Attitude of parents regarding work[b] ($n = 495$)				
Considers work important	410 (82.8%)	251 (77.5%)	85 (93.4%)	74 (92.5%)
Considers work not important or unknown	85 (17.2%)	73 (22.5%)	6 (6.6%)	6 (7.5%)
Attitude of social environment regarding work[b] ($n = 496$)				
Considers work important	328 (66.1%)	202 (62.2%)	67 (73.6%)	59 (73.8%)
Considers work not important or unknown	168 (33.9%)	123 (37.8%)	24 (26.4%)	21 (26.3%)

[a] Individuals finding work in this table have not been able to retain work for 6 months.
[b] Self-report by individuals with mild ID.

0.49–1.89), whereas it was positively related in the MI analysis and that the coefficients for living situation were not estimable in this complete case analysis.

4. Discussion

The results from our study indicate that motivation, expectations regarding future work level, living situation and gender are predictors for work participation for young adults with mild ID. In our study personal factors exceeded social factors in importance when predicting work participation in this group. Moreover, we did not find substantial differences between predictors for finding work and maintaining employment.

Table 2
Results multivariate survival analysis STATA for work outcome with a backwards regression procedure.[a]

Perspective SSI and individuals with mild ID	Finding work (yes/no)				Sustainable employment (yes/no)			
Variables	HR	95%CI	95%CI	*p*-Value	HR	95%CI	95%CI	*p*-Value
Gender (male)					1.72	1.13	2.64	0.012
Living situation (ref residential placement/sheltered accommodation)								
Living independently (with or without partner)	2.94	1.20	7.21	0.018	15.31	1.79	130.93	0.013
Living with parents/family/foster family	2.96	1.50	5.81	0.002	13.59	1.82	101.30	0.011
Expectation regarding future work level (ref not able to work)								
Fulltime in a regular job	4.09	2.57	6.53	0.000	3.03	1.61	5.72	0.001
Part-time in a regular job	2.33	1.46	3.72	0.000	1.82	1.01	3.29	0.048
Motivation (high)	3.47	1.31	9.21	0.013	5.32[b]	0.78	36.47	0.089

[a] Because of the considerable number of missing values for the covariates, missing data for these variables were imputed.
[b] HR, CI and *p*-value were taken from the pre-final step in the backwards regression analysis, after which motivation was excluded from the model.

Results showed no substantial differences between predictors for finding work and maintaining employment. Living situation and expectation regarding future work level were found to predict both work outcomes for young adults with mild ID. Motivation did not reach significance for maintaining employment, but was only removed from the model in the backwards regression analysis in the pre-final step. As can be seen from Table 2, this happened despite the fact that the HR was higher than in the analysis for finding work. This is caused by the fact that statistical power was reduced in the analysis for maintaining employment due to the limited number of young adults with mild ID that maintained work for at least six consecutive months during the follow-up. This also lead to rather broad CIs for the predictors in these analysis, meaning that, although these factors were statistically related to the outcome, the magnitude of our estimates (HRs) should be interpreted with caution.

The only relevant difference in predictors between both outcomes was the fact that gender was included in the final model for maintaining employment, whereas it was no predictor in the analysis for finding work. The fact that we did not find substantial differences in prognostic factors between both outcomes might be due to the length of the follow-up of our study, which was relatively limited. It may well be that this period is too short for young adults in the transition from school to work to find sustainable employment. At baseline 70% of our sample were still in education and may not have been ready yet to enter the labour market. However, as the majority of the individuals still at school were 18 years of age at baseline (71.5%) and ID-individuals in the Netherlands often finish their education at age 18, the majority will have left school during the follow-up, but they may not have had the chance to stay in work for at least six months. Only a small group of our sample were 17 years of age and at school ($n = 71$). Another possible explanation may be that young adults in general are known to change jobs regularly (UWV, 2011). The work status of our group of young adults with mild ID is not an exception in short and unstable employment trajectories, but they may have had more difficulty in finding a new job when losing a previous one. Both scenarios may have led to the limited number of individuals finding sustainable employment in our study.

In reviews as well as qualitative studies, both personal and social factors have been regularly mentioned as factors associated with work outcome in this group (Dixon & Reddacliff, 2001; Eisenman, 2003; Foley et al., 2012; Timmons et al., 2011) and the importance of especially personal factors for work participation was confirmed in our study.

The personal factors expectation regarding future work level and motivation both predicted work participation for young adults with mild ID. Results showed that expectations concerning work outcomes of the young adults themselves were a strong predictor of the actual work outcomes. When young adults expected themselves to be able to work, fulltime or part-time, they were more likely to find and maintain work than those who did not expect themselves to be able to work, although the difference between part-time work and not being able to work was borderline significant for maintaining employment. Positive expectations may stimulate finding work, but once employed other, e.g. work-related, factors may influence the effect of expectations on maintaining employment.

In our study self-esteem did not predict work outcome. Individuals with mild ID are sometimes found to be unable to assess themselves accurately. Inaccurate self-assessments may produce unrealistic expectations of unfeasible outcomes (Wehmeyer & Bolding, 2001) and become counterproductive.

Motivation was only statistically significantly related to finding work, but close to significance for maintaining employment ($0.05 < p < 0.10$), while the HR was higher for this latter outcome, indicating a stronger effect. In the literature motivation has been described as an enabling factor to find work, but also to overcome negative previous work experiences (Foley et al., 2012; Timmons et al., 2011). Although the effects of motivation on the work outcomes were strong, the accompanying CIs for maintaining employment, but also for finding work were large. This can be explained by the fact that, the distribution of our motivation variable was highly skewed, with more than 90% of all individuals being highly motivated.

The social factors, social support and attitude regarding work, of parents as well as the social environment, were not predictive of work participation in our study. This is in contrast with findings from other studies, although evidence from these studies is limited (Dixon & Reddacliff, 2001; Foley et al., 2012; Kirsh et al., 2009; Timmons et al., 2011). Nevertheless, reviews concluded family involvement to be an essential component of the transition process from school to work of young adults with intellectual disabilities by assisting individuals to develop a worker role (Foley et al., 2012; Kirsh et al., 2009). Qualitative studies identified several ways in which families were supportive of the efforts of young adults with mild

intellectual disabilities to find (sustainable) competitive employment: families offered moral support and verbal encouragement; families were role modelling employment to show that work was an expected role in adulthood and emphasized work-related goals; families motivated the young adult to stay in a job and to value work and families displayed a strong work ethic (Dixon & Reddacliff, 2001; Timmons et al., 2011). However, in spite of the findings of these descriptive studies, when tested empirically in our cohort, the social support and attitude of the social environment of the young adult with ID did not predict work participation. A reason for the limited effect of social factors on work participation in our study may have been that the available support has not been effective for these young adults. The majority of parents had a low educational level (57.0%), compared to 35.7% in the general Dutch population. These low educated parents may not have had the ability to be a role model and the resources to effectively support their young adult to find and maintain work.

The living situation of young adults with mild ID was the only significant social factor in our final model. Compared to young adults with mild ID living in residential institutions, those living with parents or living independently were more likely to find and maintain work. This is in concordance with the literature (Dusseljee, Rijken, Cardol, Curfs, & Groenewegen, 2011). However, although living situation is an important factor in the social environment of the young adult with mild ID, in this case living situation may also be interpreted as a proxy for severity of the disability. Individuals who were in residential placements probably had more severe disabilities, as was found in previous studies (Tossebro, 1995; Wehmeyer & Bolding, 2001). They may need more support in daily living activities, which also influences their employment opportunities. According to the Dutch Social Security Institute in the Netherlands 65% of individuals in residential placement do not have an ability to participate in any kind of work, paid or unpaid, and 13% are involved in day centre activities, which may be work related but is unpaid (UWV, 2008).

In our study, we only included individuals with mild ID. This group represents a growing number of disability claimants in the Netherlands. In 2006 26% of young adults applying for a disability benefit had mild ID, in 2010 this percentage had risen to 29%. However, these young adults do have abilities to work and it is important to know which factors do influence work outcome for this group, to be able to support them to find and maintain employment. We did not include individuals with moderate or severe ID. Most of them did not have the ability to work according to the insurance physician. However, 7.5% of the individuals with moderate or severe ID in our cohort ($n = 147$) did find work. This percentage is considerably lower than the percentage found in young adults with mild ID finding work (40.2%).

4.1. Strengths and limitations

The strengths of this study are the size of our sample and the use of register data for work outcome, measured quarterly, allowing assessment of work outcome during the follow-up for the complete sample. However, some limitations must be taken into account as well. The personal and social factors included in the study were self-reported by the young adults with mild ID. They may have difficulty to make a realistic estimation of their capabilities and limitations. It may be difficult for this group to fill out a questionnaire requiring reflection on their own abilities, self-esteem, motivation and so on. Moreover, it is not clear whether the young adults with mild ID adequately understood the questions. Independent functioning is often felt as an important asset by this group and they may not have asked for assistance filling in the questionnaire when this was needed. This most probably will have led to underestimations of the relations under investigation. However, as we did find self-report variables predicting outcome, the respondents will have had some idea regarding the meaning of the questions.

Work outcome was measured quarterly, so we may not have captured work performed in the months in between. Individuals may have found work, but not maintained it until the following measurement. With regard to maintaining employment, individuals may have found work, lost their job, but found new work before the following measurement. In this case sustainability is suggested, but in reality transitions may have taken place. However, it seems reasonable that the vast majority of individuals did not find more than two subsequent jobs in six months, so misclassification was presumably small.

4.2. Conclusion

Personal and, to a lesser degree, social factors are valuable in predicting work participation. Motivation, expectations regarding future work level, living situation and gender all predicted work participation for young adults with mild intellectual disabilities. Results showed no substantial differences between predictors for finding and maintaining employment. As this study is the first prognostic study to our knowledge to assess the predictive value of personal and social factors related to work outcome in this group, further research is needed to establish the predictive value of the factors found. As personal factors were especially influential in predicting work outcome, motivation and expectations may be suitable factors to include in interventions designed to support young adults with mild ID to find and maintain work. Also further research is needed to assess whether expectations of individuals with mild ID are realistic or rather a self-fulfilling prophecy and whether these expectations can be influenced to foster positive work outcomes for these individuals. Moreover, further studies would need to consider the types of work performed, the work position, and the attitudes of employers and colleagues of individuals with ID as a fit between the individual, the job and the work environment is essential for successful sustainable work participation.

This study portrays the position of individuals with mild intellectual disabilities in the labour market, and the benefits they hope to gain by being employed. The study focuses on the issue of sustainable employment, which is a common problem for individuals with ID as they struggle to maintain employment once they found a job. To ensure a good job match,

it is important that parents, school teachers and transition counsellors encourage young adults with ID to express their desires and affinities regarding employment. When these are taken into account in job searching, their feelings of competence and autonomy may increase and have a positive influence on personal attributes, like motivation and expectations. As expectations are an important predictor for both work outcomes, realistic expectations are imperative for being successful in finding as well as maintaining employment. Parents, school teachers and transition counsellors should help young adults with ID to develop these realistic expectations for future employment. Once working, young adults with ID are in a vulnerable position on the labour market and it is important for them to receive specific and continuing support on the job, e.g. from their employer or a colleague, to be able to maintain employment.

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